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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,343	09/03/2003	Seiichi Nakatani	10873.0813USD1	4963
23552	7590	02/07/2006	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			CHANG, RICK KILTAE	
			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/654,343

Applicant(s)

NAKATANI ET AL.

Examiner

Rick K. Chang

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15,20-28 and 33-35 is/are rejected.
- 7) ☒ Claim(s) 16-19,29-32 and 36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>of record</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Art Unit: 3729

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 15, 25-27, and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Somaki et al (US 5,641,113) in view of Chen et al (US 6,260,264).

Somaki discloses at least one electric element (13b), a connection electrode (13a), a wiring pattern (12), a thermosetting resin (34), Fig. 4c shows portions of 13b and 34 are removed, PCB (col. 1, lines 14-41),

Somaki fails to disclose grinding the electric element with an abrasive at the same time and dicing into individual components.

Chen discloses in Fig. 1b grinding the electric element with an abrasive at the same time and Fig. 9C shows dicing in dotted lines.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Somaki by grinding the electric element, as taught by Chen, for the purpose of forming individual electronic components to electrically communicate with other electronic components.

Art Unit: 3729

6. Claims 20-23 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Somaki et al (US 5,641,113)/Chen et al (US 6,260,264) as applied to claims 15, 25-27, and 33-34 above, and further in view of Janssen et al (US 3,634,168).

Somaki/Chen disclose an uncured sheet-like object (col. 5, lines 5-42) and heating to cure.

Somaki/Chen fail to disclose heating and compression, heating temperature as disclosed in claims 20-23 and 35.

Janssen discloses heating and compression, heating temperature as disclosed in claims 20-23 (col. 4, lines 37-53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Somaki/Chen by heating and compression, heating temperature as disclosed in claims 20-23 and 35, as taught by Janssen, for the purpose of protecting and adhering the connection of electronic components.

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Somaki et al (US 5,641,113)/Chen et al (US 6,260,264) as applied to claims 15, 25-27, and 33-34 above, and further in view of Saito (US 4,913,697).

Somaki/Chen fail to disclose 70wt% to 95wt% of an inorganic filler and 5wt% to 30wt% of a thermosetting resin.

Saito discloses 70wt% to 95wt% of an inorganic filler and 5wt% to 30wt% of a thermosetting resin (col. 9, lines 50-52).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Somaki/Chen by providing 70wt% to 95wt% of an inorganic filler and

Art Unit: 3729

5wt% to 30wt% of a thermosetting resin, as taught by Saito, for the purpose of providing superior processability and heat resistance to the electronic component.

8. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Somaki et al (US 5,641,113)/Chen et al (US 6,260,264) as applied to claims 15, 25-27, and 33-34 above, and further in view of Official Notice.

Somaki/Chen fail to disclose that the support is formed of an organic film or a metal foil.

Official Notice is taken that it is well known in the art to form the support of a metal foil to form a heat spreader.

*Allowable Subject Matter*

9. Claims 16-19, 29-32 and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

10. Please provide reference numerals (either in parentheses next to the claimed limitation or in a table format with one column listing the claimed limitation and another column listing corresponding reference numerals in the remark section of the response to the Office Action) to all the claimed limitations as well as support in the disclosure for better clarity (optional). Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

Art Unit: 3729

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick K. Chang whose telephone number is (571) 272-4564. The examiner can normally be reached on 5:30 AM to 1:30 PM, Monday through Thursday.

The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

A handwritten signature in black ink, appearing to read 'Richard Chang', written over a horizontal line.

RICHARD CHANG  
PRIMARY EXAMINER

RC  
February 3, 2006